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What's for dinner...is it **safe**?





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SNIFFING OUT BACTERIA EARLIER, FASTER AND CHEAPER

Working in partnership with the Canadian Food Inspection Agency, Systems and Computer Engineering PhD candidate Geoff Green is improving the data processing and algorithms used by Carleton's electronic nose to identify bacteria such as *Listeria* and *E. coli* through their own unique "smellprint".

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8 UPFRONT

Global food crisis

Millions of people around the world suffer from chronic hunger due to poverty. The number of starving people will only increase because of the demand from emerging economies, the diversion of food crops, population growth, climate change and a loss of arable land due to development.

By Jim Donnelly

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What's for dinner...is it safe?

Over the past year food-borne illnesses and diet-related health issues have received a lot of media attention. While the food processing industry has been under scrutiny, responsibility also lies with the average consumer—what we put in our mouths contributes to many public health issues.

By Kris Foster

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A kid's meal

Our kids are living on a diet of fun food. Charlene Elliott, PhD/03, is concerned all this "fun" may be contributing to the obesity crisis. Now at the University of Calgary, Elliott embarked on a three-year study to examine the marketing of food to children and joined a task force that is focused on combating obesity.

By Bryan Mullan

Mixing it up

Today, chefs rule. Janet Podleski, BA/88, and her sister Greta—stars of the Food Network show *Eat, Shrink & Be Merry* and numerous spinoffs—have ridden the wave to success, but they've kept their sights trained on health as well as marketing.

By James Hale

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Down the drain

The department of civil and environmental engineering is home to Banu Ormeci and Onita Basu, two innovative researchers at Carleton who are examining issues around wastewater treatment and public health.

By Elizabeth Howell

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EDITOR'S NOTE

Photo: Mike Pinder



A few years ago a friend—a meat-loving Hindu—told me he was becoming scared of his food. He is a documentarian and decided his next project would tackle the food crisis and how what we eat is connected to the environmental, cultural, economic and health crises around the globe. Our conversations about this project got me thinking about what I was eating. I am sure countless others started thinking about their consumption habits after seeing *Super Size Me* or reading *The Omnivore's Dilemma*. It is human nature to take our cues from media and friends. The increased coverage that food-borne illnesses have recently received has only contributed to the consumer's heightened awareness.

Now more than ever, it seems that we are thinking about food. These thoughts of food go beyond what to have for lunch: we are starting to consider food safety, how our health is connected to what we eat and the consequences of what we consume. This change couldn't come at a better time as the food industry, and the food produced by it, has become vastly complicated.

A walk through a grocery store illustrates just how complex eating has become. In the produce section you have the choice between organic and, conceivably, inorganic—you can also buy vegetarian bacon here. The department for carnivores displays an array of fresh, frozen and processed red and white meat. The other aisles have packaged food extolling the virtues of whole wheat, vitamins and minerals; products that are low in trans fats and a good source of protein; frozen entrees to feed one person or an entire family; and a whole aisle, from powdered shakes to frosted flakes, that is part of a balanced breakfast. You also have marketers and psychologists looking over your shoulder to see if the new packaging or discounted price closed the deal.

For the average consumer, there are more questions than answers. With this issue we looked to the experts in each faculty in hopes of answering a few of those questions.

How has our relationship with food changed? The historians, anthropologists, psychologists and sociologists in the Faculty of Arts and Social Sciences can answer that. What contributes to the global food crisis? The Faculty of Public Affairs and faculty members in the Sprott School of Business have answers and solutions. What is safe to eat? The new Food Science and Nutrition program in the Faculty of Science can point you to healthy choices, while the Faculty of Engineering and Design ensures that water is safe and food-borne illnesses are better detected.

At Carleton's table, food is a common staple of discussion, and that shouldn't come as a surprise given the important role it plays in life.

Kris Foster
Editor

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FROM THE TOP

When Brillat-Savarin said, “Tell me what you eat, and I will tell you what you are”, he linked the physical constitution of our essence with the idea of taste and art. Food provides us not only common ground on which to discuss philosophy, science, art, history, economics and theology, but an age-old moral compendium of proverbs and good advice. We all know we are unlikely to have our cake and be able to eat it as well, that we should not partake of forbidden fruits, that big fish eat little fish and that dog does not eat dog.

In Greek mythology Persephone was ordered to the underworld half of every year for having consumed half a pomegranate seed. Food represents temptation. Requiring one’s passion is the allegorical equivalent of sating one’s hunger. Shakespeare wrote, “If music be the food of love, play on.” George Lillo added, “There’s sure no passion in the human soul, but finds its food in music.”

We even like to imagine the repasts of deities. Ambrosia, loaves and fishes which can be infinitely divided, milk and honey which forever flow, inspire chefs but also artists of all media. Bacon wrote of books to be tasted and others to be consumed in a single sitting. We all enjoy food for thought.

Malthus, in his *Essay on the Principle of Population* speculated that the history of humankind is one of perpetual struggle for room and for food. In 1909, Brazilian priest Helder Camara said, “When I give food to the poor, they call me a saint. When I ask why the poor have no food, they call me a communist.” Food brings economics, politics and ethics together.

Food reflects culture, not only in its preparation and serving, but in its link to celebration and ritual. Food also symbolizes nurture, our humanity and our existence. We require food to live. Sharing our meal with others is a sign of generosity and compassion. The size of the repast is symbolic of our wealth and its quality, symbolic of our industry. Science and technology provide us the knowledge of how to produce and transport food. The history of food production, preparation, conservation, transportation and distribution is indeed the story of civilization.

Carleton professors, staff and students dedicate themselves to solving real-world problems and alimentary safety, water treatment and the use of herbicides and pesticides are complex matters of signal importance today. Our graduates work on some of the serious issues faced by the United Nations’ World Food Programme, host cooking shows on the Food Network and research the question of child obesity—a basic health concern around the globe. The history of food consumption, the psychology and anthropology of eating and the business of serving and selling food are all areas of fundamental research with significant applications. I applaud our professors and our alumni for their brilliant efforts in this field. Food has proven to be a timely choice of topic and has resulted in tasteful editorial work.

Roseann O’Reilly Runte
President and Vice-Chancellor
Carleton University



DEFINING DREAMS AT CARLETON

Carleton University’s new strategic plan, *Defining Dreams*, was unveiled in early February. President Runte, in consultation with a wide range of internal and external groups, has developed a strategic plan that will inform the university’s decision making over the next five years, highlight its top priorities and set specific targets with timelines. Read the presentation online at http://www2.carleton.ca/about/administrative/strategic_plan.php.

CONVOCATION COMMUNICATION

Two communications gurus were awarded honorary doctorates at Carleton's 133rd convocation on November 8. A Doctor of Laws, *honoris causa*, was awarded to innovative market pollster Angus Reid, PhD/74, in recognition of his contribution to the development of the field of public opinion research and to Mark Starowicz, executive director of documentary programming at CBC, in recognition of his career as a producer of influential current affairs and documentary programs in Canadian broadcast history. They joined the more than 1,150 graduates welcomed to the alumni association that day. For more information visit carleton.ca/newsroom/news-releases.

FULBRIGHT VISITING RESEARCH CHAIR ANNOUNCED

Carleton University and the Foundation for Educational Exchange between Canada and the United States renewed their support for a Fulbright Visiting Research Chair in the centre for North American politics and society at Carleton. Sheila Croucher, from Miami University, took up the position in January 2009.

Croucher, a professor of political science, focuses her research on issues of identity politics and globalization. Her most recent book, *Globalization and Belonging: The Politics of Identity in a Changing World*, examines how various forms of political and cultural attachment—citizenship, nationhood, ethnicity and gender—are being reconfigured in the context of global change.

The Canada-U.S. Fulbright Program enhances mutual understanding between the people of the neighbouring countries by providing support to outstanding graduate students, faculty, professionals and independent researchers who conduct research, lecture or enroll in formal academic programs in the other country. For more information visit fulbright.ca.

ROYAL TREATMENT

Two Carleton University professors are being honoured by the Royal Society of Canada (RSC) for outstanding achievements in research.

Banu Örmeci, a Canada Research Chair in wastewater and public health engineering in the department of civil and environmental engineering, was honoured as an Outstanding Young Scientist by the RSC and the InterAcademy Panel on International Issues. Örmeci is working on innovative water and wastewater treatment processes.

Fraser Taylor, director of Carleton's geomatics and cartographic research centre, was inducted into the Royal Society of Canada in a ceremony in November 2008. Taylor is one of

the world's leading cartographers and a pioneer in the application of the computer to cartography. He produced two of the world's first computer atlases in the early 1970s.

In Canada, recognition in the Royal Society of Canada is the highest honour that scholars, artists and scientists can achieve. For more information visit carleton.ca/newsroom/news-releases.

OUT OF AFRICA AND INTO CARLETON

Carleton University is launching a new institute and academic programs in African studies.

"Both projects are a marvel in interdisciplinary co-operation which is one of the things that Carleton does best," says Blair Rutherford, director of the institute. Forty-four faculty members from five faculties and 19 departments sit on the African studies committee that determined the need for both initiatives.

The institute of African studies and programs fall under two faculties, Public Affairs and Arts and Social Sciences. "This is a true reflection of our ability to collaborate between faculties to create innovative interdisciplinary programs that meet the needs and interests of our students," says Katherine Graham, dean of the Faculty of Public Affairs.

The institute will oversee two new academic programs, organize conferences and other events, and network with government, NGOs, embassies and high commissions and the community. It will also promote new research initiatives.

"We created the new academic programs in response to a high demand from the community to learn more about this fascinating continent that is not only the birthplace of humanity but is perhaps the most culturally and geographically diverse continent on earth," says Rutherford.

The new interdisciplinary program in African studies will offer students a window into the history, geography, cultures, cinema and economics of Africa and explore critical issues the continent is facing.

Students can pursue a minor in African studies or a combined honours program that allows them to combine African studies with any major within the bachelor of arts. For more information visit carleton.ca/africanstudies.

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Carleton University ALUMNI REUNION WEEKEND JUNE 5 - 7, 2009

Welcome back.

Calling all graduates from the classes of 1959, 1964, 1969, 1979, 1984, 1989, 1999, and the Carleton College years!

This is your anniversary year, and you're invited back to Carleton for the third annual Alumni Reunion Weekend to celebrate. Reconnect with your graduating class. Revisit campus—and the National Capital Region—in full springtime bloom. And remember your years at Carleton with fun, food, and friendship.

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A TRIBUTE

As graduates of Carleton's PhD program in political science, we were extremely saddened by the news of Donald Rowat's passing—as former students of his, the sadness is especially personal.

Don will be sorely missed by Carleton alumni and faculty, by the Canadian and international political science community, by his former students and by anyone who is interested in a democratic and accountable public sector. His intellectual work had profound practical impact on the public sector—on officials and citizens alike. The respect in which he was held ultimately resulted in his term as president of the Canadian Political Science Association.

He was an inspirational teacher and motivated and mentored a number of Carleton grads to go on to successful careers in academics and government. His love of teaching was most obvious in his role as thesis supervisor, in which

he displayed an impressive combination of wisdom, patience and support.

Don was also a remarkable athlete. He played a good game of tennis despite having to change from a right-handed to a left-handed player in his later years because of chronic tennis elbow. He also played squash, and was a strong cross-country skier. He even took up sailing when he was in his 60s.

Don kept in touch with his former students. He and his wife Louise were wonderful dinner companions. He also maintained contact with his many friends and colleagues elsewhere with his self-designed holiday cards. His artistic skill was reflected in a combination of pen-and-ink drawings accented with watercolours, usually based on photographs that he and Louise had taken during their extensive travels.

The world seems smaller and less interesting now that he is gone. Don

deserves to be remembered as one of nicest, most intelligent and most genuine people we know, and certainly a very special professor.

Sincerely,

*Kenneth M. Gibbons
and R. V. Stewart Hyson*

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GLOBAL FOOD CRISIS



BY JIM DONNELLY

Kigali in early January is relatively moist and warm, the Rwandan capital is just emerging from the shortest of the rainy seasons that bathe its surrounding hills in life-giving moisture. A mantle of ripened plantain bananas, beans, sweet potatoes and cassava blankets much of the landlocked nation's misty countryside.

But when Jean-Pierre de Margerie, MA/92, arrived one January day in 1993, he says much of what he saw belied the country's relatively fertile growing conditions. The country's nebulous civil war was in full swing, and the resulting genocide—one that would eventually shred the country's largely agriculture-based economy—was still a year or so away.

"I remember arriving in Rwanda on a Thursday, and on a Saturday some colleagues of mine took me to a refugee camp just outside Kigali," explains de Margerie, who at the time was on his first assignment with the United Nations World Food Programme (WFP). What he saw, he explains, "traumatized" him.

"I had never confronted, really, the harsh reality of the majority of people in sub-Saharan Africa," continues the Norman Paterson School of International Affairs graduate. The area was awash in a sea of tens of thousands of refugees, each utterly dependent on international aid for what meager food rations they had.

"That was a reality check—when I saw the living conditions of these refugees, who were living just 15 minutes away from where I was living in Kigali."

And though the WFP says Rwanda

country's food security issues, sadly, are not. Around 850 million people across the globe suffer from chronic hunger and health problems due to poverty, and the lion's share live in developing nations such as Rwanda.

That's a number that has only risen in the past year or so, explains globalization expert Moses Kiggundu, professor in the Sprott School of Business, thanks to a tempest of factors which drove the price of grain sky high in 2008. The demand from emerging economies, the diversion of food crops

Around **850 million people** across the globe suffer from **chronic hunger** and health problems.

has made significant economic and agricultural strides since those dark days, the most densely packed African nation of all still suffers from the twin demons of extreme poverty and food insecurity. Around 90 per cent of the country's population still practise subsistence agriculture, and of its little more than 10 million people the WFP says 52 per cent of households—or around five million people—are either "food insecure" or on the verge.

But while Rwanda's blood-soaked tragic legacy is unique, authorities on the ongoing world food crisis say the

and subsidies for biofuels, population growth, climate change, and a worldwide loss of arable land due to development all have helped push food prices to their highest levels ever.

The international market price for wheat, for instance, doubled year-over-year in late 2007, eclipsing \$10 a bushel for the first time that December. In the U.S. food prices rose 4 per cent that same year, the highest jump in 17 years (the average rise over the past 15 years has been 2.5 per cent). Some say 2008's numbers will be even higher.

Meanwhile, Rwandan prices for food





Photo: Brigitte Bouvier

staples, according to government statistics, shot up as much as 49 per cent year-over-year by November 2008—practically a death sentence to those who had flirted with malnutrition before the spike, explains Kiggundu.

And though food prices dropped in the latter half of 2008 thanks to a quickening global recession—soybeans, for instance, were in December 2008 trading at \$9 a bushel instead of the \$16 of six months previous—experts say the current volatility in commodities means where they'll go next is anyone's guess.

"In most of these countries, food production is only for subsistence," he says. Those who don't have enough to eat suffer compounding health issues, including susceptibility to disease and bloated child-mortality rates. "We see people who have HIV, for instance, respond to medication much more positively when

they have enough food to eat," he says.

To make matters worse, up to 30 per cent of the food produced in many developing areas is wasted thanks to a lack of infrastructure, including dilapidated roads and antiquated refrigeration

techniques, explains Kiggundu. That, in turn, severely affects their ability to produce enough food to sell on the open market as a commodity.

Still, the world food crisis "is not a crisis of supply," maintains Kiggundu.

"The world produces enough food to feed everyone before they go to bed,"

he explains. "It's really a distortion between demand and supply."

To get the full picture, he says, the practices of Western economies—which, despite their recent financial humbling, still control much of the world's flow of goods—must be taken into account. On one hand, he says, North America and Europe encourage developing nations to enter globalization by selling what agricultural commodities they have. Rwanda, with its burgeoning international coffee and tea trade, is no exception.

"But on the other, we prevent developing countries from selling whatever food they manage to bring to the international market" through domestic tariffs and subsidies on food, explains Kiggundu.

"When we talk about the food crisis, it's not a crisis of production. It's a crisis of the economic system that we've put in place that distorts the distribution of what we produce."

Peter Andrée, assistant professor in political science at Carleton, agrees. "We need to stop thinking about food

The world **food crisis** doesn't touch only those living in **third-world** or developing countries...

as a commodity," says the world political economy and food system expert. The "free market" as defined by the West, along with the liberalization of international trade in its current incarnation, is also behind inequalities in the world's food supply, he says.

"The pressure of trade liberaliza-

The power of food

BY JIM DONNELLY

When Owen Rowland first got into biology, he says he wasn't looking to solve the globe's ongoing food crisis—much less the scourge of global warming.

But it turns out that by closely studying protective enzymes layering the exterior of common plants, he may have edged the world closer to doing just that.

"I'm not directly interested in biofuels," admits Rowland, assistant professor in the department of biology. "My core research currently lies in how plants resist environmental stress."

One of the ways they do that, however, is through a hydro-

carbon- and wax-laden protective coating on their surfaces, he explains. "Turns out those hydrocarbons are very similar to the hydrocarbons you use in fuels," continues Rowland.

The plant biochemistry and molecular biology professor explains he and his



tion has opened up markets for many products," Andrée says, but adds that things get sticky when countries such as the U.S. protect their farmers with heavy subsidies and tariffs, while concurrently espousing the global benefits of free trade to developing nations.

One need look only to the humble yet sturdy grain of rice to see the downside of the world's trade in food, argues a 2006 trade briefing paper from the Washington, D.C.-based Cato Institute Center for Trade Policy Studies. Worldwide, it reads, tariffs on rice average 43 per cent—a number that essentially shuts growers from developing nations out of most markets. The U.S., as well, provides around \$1 billion in subsidies per year to U.S. rice growers—usually large, corporate farms—while employing restrictive tariffs on imports, the report reads. And while the paper says the policy drives up U.S. consumer prices it has also helped sink international market prices to unrealistically low levels, further hurting developing farmers.

But the world food crisis doesn't touch only those living in third-world or developing countries such as Rwanda, Ghana or even India. Even relatively large economies such as Mexico have felt the pain of whipsawing commodity prices, with the price of tortillas, the country's main staple, rising 60 per cent last year—a situation which led to angry demonstrations in several cities.



The world food crisis "is not a crisis of supply," insists Moses Kiggundu, professor in the Sprott School of Business and a globalization expert.

Similarly, the demand for food bank services in the West has climbed steadily over the past few years, explains Andrée. "And that was during boom times," he continues. Considering the recent financial and manufacturing meltdown, "I think there's going to be a real need to think about how to ensure food access for people who have lost their jobs," he says.

It certainly is a tough world out there, perhaps one not for the faint of heart. For de Margerie—who is now the WFP's North Korea country direc-

tor, based in Pyongyang—it's one that he says even injects a wisp of disillusionment within him when he returns to his home in Quebec during time off.

Most people, he says, simply don't have a full understanding of the inequalities of the world when it comes to something as natural and vital as food. "And people need to start thinking about these issues, which could have a profound impact on humanity."

Kiggundu, for his part, agrees. "It's a very complicated issue, and unfortunately people usually only see the symptoms of it without taking a look at what's causing it," he says.

"You have countries that are being run into the ground, such as Zimbabwe," he continues. But other countries are working hard to enter the world economy, and must be encouraged with more than just talk. "We need to work through the value chain for producing food with them, to encourage R&D, innovation, production, marketing, storage, distribution, packaging, pricing and nutrition so they can become significant contributors to producing food as a marketable product.

"That, and developed countries need to have a serious discussion about the damage our subsidies are causing to the rest of the world." ■

Jim Donnelly, MJ/04, is the editor of the Ottawa Business Journal.

research partners at Carleton, whose research also has implications within the realm of crop health and resistance to outside threats, have figured out a way to produce biofuels from vegetative waste material such as corn husks, manure and straw.

Considering bioethanol and biodiesel—the two biofuels currently on the commercial market—are currently produced using food crops such as corn, sugarcane and soy, it's easy to see the practical applications of Rowland's research. The use of crops to produce bioethanol and biodiesel are commonly blamed for diverting food supply and driving up prices, along

with producing greenhouse gases during their relatively dirty production processes.

And though he says they're "still quite far away" from any kind of commercial product, the potential is there for a clean fuel produced sustainably from waste material. "If we're able to purify it and make enough of it, we'd be able to use it (as fuel)."

It's a similar idea to that of cellulosic ethanol, a biofuel technology that also uses waste material but doesn't utilize already-existing plant enzymes. It's been commercialized but is currently in the demonstration phase. ■

What's for dinner ...is it safe?



WATCH WHAT YOU EAT. IT'S A DIRECTIVE WE LOST SIGHT OF, BUT ONE THAT'S INCREASINGLY RELEVANT.

BY KRIS FOSTER

Cows were mad and milk went bad. With *Salmonella* spinach was soiled and tomatoes were spoiled. *E. coli* found its way into burgers and *Listeria* was found deep within meat processing plants. Over the past year food scares around the world caused consumption reticence in the average consumer, but the incidence of food safety issues provided steady fodder for media. From soil to plant to animal to processing to consumption, it became obvious that our health was tied to each step of the food chain. And with each step, evidently, there was room for error.

These issues, combined with the rise of diet-related health issues—coronary disease, cancer, obesity and diabetes—make Hippocrates' ancient decree "Let food be thy medicine" seem dated at best.

And although the health benefits of food are widely known, food can also act like poison rather than medicine. One reason for this is the ever-changing relationship that we have with what we put in our mouths.

Life in the fast-food lane

"We stopped cooking and now we know nothing about food preparation," says Louise Heslop, professor in the Sprott School of Business and expert on consumer behaviour. "We don't understand food anymore because life changed."

These changes, says Heslop, are numerous and interrelated. The pace of life changed—households contain multiple careers and those careers are surrounded by family activities, doctor appointments and other responsibilities. Our lives demand convenience, and so highly processed foods enter the picture. From frozen burritos to microwavable roast beef, getting dinner to the table after work is simpler, at least as far as household preparation is concerned.

Because of our reliance on processed food, what we eat no longer comes from our backyard or from our neighbour's farm. Often we haven't got the faintest clue as to the origin of the previously frozen teriyaki chicken stir fry we ate for dinner. Beyond that we don't know how it was produced and what's actually in it.

"We don't know where it comes from and what to do with it," explains Heslop. "For a long time that was okay because as manufacturers took over preparation there weren't a lot of changes, so you basically understood what you were eating. But now it is far more complicated—the distance between preparation and consumption has grown and grown and grown."



And as the production process grows, so too does the room for error. Each step in the process presents another opportunity for mistakes, contamination and the introduction of pathogens and toxins. "With more links in the chain it is inevitable that things will go wrong," says Heslop, whose background includes certification as a professional dietitian and who is an expert in consumer acceptance of genetically modified foods. "When they go wrong, they go wrong on a massive scale."

Processing it all

The production process is no longer on par with canning your own tomatoes, says Heslop. "If something went wrong with your tomatoes, only a household would get sick, not 3,000 people down the road," she explains. Now the processing system and distribution scale are so huge that errors are huge in scope too.

"Maple Leaf is a perfect example of that," says Heslop. "It's a company that, by all accounts, is a very responsible company, but it's so big and has such a wide spread of activities that when there is a failure in quality control it has a massive impact."

Two Maple Leaf products from one contaminated plant in Toronto were recalled by the Canadian Food Inspection Agency (CFIA) when they tested positive for a strain of *Listeria* in August 2008. The recall came too late for the 20 people who died and hundreds more who suffered illnesses linked to the contamination. The meat recall was the largest in Canadian history. Unfortunately, this is but one recent example of how the food processing system can fail.

"In general we assume what's in the marketplace is safe," says Heslop. In addition to this inherent trust we have in the industry, we also have government watchdogs looking out for our health. Food safety is the CFIA's number one priority—it exists to protect Canadians from food hazards by regulating everything from eggs and meat to labeling and

bial microscope. But is the level of scrutiny justified? Yes, but despite the current concern about the safety of our food, food-borne illnesses aren't just a present-day occurrence.

"We have always had problems with these micro-organisms," says Tyler Avis, assistant professor in the department of chemistry, who delivered one of the first courses in the Food Science and Nutrition program this winter. "It's just that we didn't have the means or the technology to know what some of these problems were."

In Avis's opinion the recent outbreaks of food-borne illness-

es are emblematic of the current structure of the food industry rather than being a system-wide failing. "We have a lot of large processing firms and large farms. If you have a problem in a large organization which produces food and distributes it to a large segment of the population, that's when there is a higher possibility to affect a large proportion of people," explains Avis, echoing Heslop. "That's one of the reasons we have been getting more reports on food-borne illness: there is a greater chance more people will be affected."

There are never simple solutions, explains Avis, and while science continues to develop methods to combat particular problems—*Listeria*, *Salmonella*, *E. coli*—new problems arise. "Finding out which steps in the food chain are contributing to pathogen contamination and developing better means of controlling them are preventive measures that should be a main focus to ensure food safety," explains Avis. "However in some cases, new strains of a harmful micro-organism occur and there isn't much we can do from a preventive standpoint, you have to manage these outbreaks as best you can as they arise."

Avis's colleague in the Food Science and Nutrition program, Apollo Tsopmo, sees another reason—in addition to the outbreak of food-borne illnesses—for the level of inquiry into the industry.

"It deserves the scrutiny, because, simply, we should know what we are eating and what's been added to it," says Tsopmo, assistant professor in the department of chemistry. "Indeed food used to be simple and now with nutrients, sweeteners, preserva-

tives, colours and flavours being added to what we eat, people want to know if it is safe."

For the most part what food processors add is safe, says Tsopmo, and in many cases there are benefits to what is added. "Preservatives increase shelf life and some may actually kill bacteria," explains Tsopmo.

But the concern remains that through processing some of the nutritional value is depleted. "Health Canada requires those vitamins and minerals to be added back—white wheat flour, for example, has essential elements added back



Attitudes toward food in North America are underdeveloped, says Louise Heslop, professor in the Sprott School of Business.

We need more processes to control the **chance of error** if we are going to have an industry we can trust.

packaging. Yet unsafe food still makes its way to our tables.

"Relying on spot checks, which is standard practice, isn't good enough," says Heslop. "We need more processes to control the chance of error if we are going to have an industry we can trust."

That trust has certainly been tested, says Heslop, and we are now at the point that we are questioning large institutions of all kind—corporate farms, processors and government.

Obviously, the recent rash of food-borne illnesses is the reason the food industry has been placed under the proverb-

We are essentially faced with one of the **greatest problems** in terms of health.

in, making the quantity similar to what it was before processing," explains Tsopmo. "Sometimes processed foods are even more nutritious and better tasting than before."

One cog in the machine that drives the industry has been overlooked altogether. And that's us, the consumers. The onus isn't solely on those who produce what we eat.

"We know that the vast majority of food poisoning results from bad practices in the home," explains Heslop. "Food could be stored or refrigerated incorrectly, badly prepared, there could be cross contamination, any number of things."

The truth is consumers are all too quick to point fingers and avoid blame. We are what we eat, and what we eat is our responsibility too.

"We have to get back to understanding what it is about food that we need to protect ourselves from," says Heslop.

All-consuming behaviour

"Everybody has a responsibility, including the food processor and the food industry," says Tsopmo. "But what actually drives the food industry is what people are going to buy."

It is a simple case of supply and demand. When consumers clamour for the triple cheeseburger with six slices of bacon and an extra, extra large side of French fries, they will receive a triple cheeseburger with six slices of bacon and an extra, extra large side of French fries. When consumer winds changed and whole wheat and essential fatty acids gained favour and trans fats and carbohydrates fell

out of favour, lo and behold, the food industry mirrored consumers' tastes.

"The industry doesn't really care about how many calories or how much fat is in a product, if the product will be bought, it will be produced," explains Tsopmo.

"It is amazing how market driven diet changes are," agrees Heslop. "Manufacturers and marketers are wildly successful in shifting demand. If you say trans fats are bad, and the manufacturer figures out how to get trans fats out, make money and label it 'trans fat free', they will shout it from the

rooftop, and make sure that everyone knows they shouldn't have trans fats."

And that is a major problem. We are quick to listen to every "expert" or advertisement for nutritional advice while very few search out the knowledge and information themselves. If we show little interest or concern over what we put in our mouths, why should food producers be concerned?

"We have attitudes towards food in North America that are underdeveloped," says Heslop. "We are a developing nation in the way we approach food and nutrition."

And public health in Canada reflects this sentiment. Although smoking remains the number one health risk in Canada, obesity is tipping the scales as a major risk to public health—as staggering as it is, Statistics Canada reports that two out of three adult Canadians are obese or overweight; and child obesity has nearly tripled over the past 25 years.

"We are essentially faced with one of the greatest problems in terms of health," says Alfonso Abizaid, assistant professor in the department of psychology, who researches the biology, brain chemistry and environmental factors that contribute to over-eating and cravings. "When we talk about obesity we are not just talking about people being overweight, but also people with a host of secondary diseases that come from being obese, like diabetes, heart disease, cancer, possibly even neurodegenerative disorders, you name it. All can come from poor eating habits and being overweight."

According to Abizaid we are fighting biology and evolution in this battle of the bulge. "A million years ago we couldn't just call the pizza place when we felt hungry, we had to go out and look for food, and because of that we evolved to consume calories at every meal, many of which were stored for use later," explains Abizaid. "I think we became addicted to those foods that, in the distant past, were the ones that allowed us to survive by providing extra calories, the sugary and fatty foods. We have been selected by evolution to prefer these foods."

It becomes less of a mystery, then, as to why grocery store aisles are stocked full of packaged products that are high in fructose, fat, corn syrup and calories. We eat fatty foods, knowing they aren't good for us, but perhaps we can't help it. Interestingly enough, research at the National Institute for Drug Addiction has identified that the brain chemistry for drug cravings is exactly the same as it is for food cravings.

"The scary part of this pandemic is that obesity may be the cause of the first decline in life expectancy in over 150 years in North America," says Abizaid. "We have been increasing our life expectancy steadily and now because of obesity and eating disorders we may actually experience a decline in life expectancy. The sad part about it is that we can actually do little things to counteract this, like exercising and decreasing calorie intake—relatively easy things to do—but we don't do that. Why is that? Because it is an addiction."

"It's clear that we don't pay enough attention to what we put in our bodies," says Heslop. "We have to look at what we eat as more than just fuel, but also as a way to stay healthy, prevent illness and a way to help our children understand and develop healthy eating and developmental habits."

So, should we shake with fear as we approach the witching hours of breakfast, lunch or dinner? No, but we should address the disconnection that we have with food and seriously watch—and think about—what we eat...in more ways than one. ■



Apollo Tsopmo, assistant professor, department of chemistry.



Charlene Elliott, PhD/03, joined a task force focused on combating obesity and embarked on a three-year study to examine the marketing of food to children.

A kid's meal

BY BRYAN MULLAN

Have you had a look at what your kids are eating these days? Dinosaurs that hatch out of eggs in a bowl of oatmeal, yogurt tubes that glow in the dark, and clouds that magically appear on marshmallows in breakfast cereal.

All these artificially focused foods are packaged in kid-friendly, cartoon-covered boxes that scream louder than a two-year-old who wants a second bowl of Chocolate Lucky Charms cereal. How is a parent to resist the pressure to buy that Bug-A-Licious Pasta and those Buzz Lightyear chicken nuggets? With slick advertising campaigns to back them, these fun foods, highlighting entertainment, excitement and play, are specifically marketed to children.

"This is the first generation of kids exposed to this quantity of fun food," says Charlene Elliott, PhD/03. And she is concerned all this fun may be contributing to the obesity crisis. Food marketers may have finally "jumped the shark."

Formerly an assistant professor at Carleton University's school of journalism and communication, a year ago Elliott moved back to the University of Calgary—where she completed her BA and MA—to join a task force that is focused on combating obesity. She also embarked on a three-year study—funded by the Canadian Institutes of Health Research—to examine the marketing of food to children. Most of the research in this area focused on junk food and television advertising, so Elliott wanted to look at how the repackaging of regular food into fun food affects the food choices made by children.

Originally the little ones would only have the option to pester their parents for Cocoa Puffs and Count Chocula in the cereal aisle, but in the last 10 years there has been a huge expansion in foods targeted directly at kids. From fruit snacks to pasta, fun food is available in every aisle of your friendly neighborhood supermarket.

"Food marketed to children is currently a \$15-billion industry and it is projected to reach \$27 billion in the next five years," says Elliott.

Those large numbers point to another hefty figure: according to the latest government statistics, 26 per cent of Canadian children are overweight or obese.

The million-dollar question is whether or not fun food is producing chubby children. Elliott says this type of food is worth considering because it teaches kids that food isn't consumed for nutrition, it is consumed for distraction.

"Food shouldn't be used solely as entertainment," says Elliott.

If food becomes just another playdate for kids, they will eat when they are bored or have nothing else to do—leading kids to have an "unhealthy relationship with food."

Elliott points out that adult behaviour modification programs, like Weight Watchers, teach adults not to eat for sport or to avoid boredom.

"You're not supposed to eat when you are bored, or when you want a distraction. But if you take a look at the messages that are being targeted at kids using these fun food marketing techniques, it actually is the very idea that food is entertainment, food is sport and food is a distraction."

So when children look at a package of fun food, how do they know what's healthy and what's not?

Elliott has conducted several focus groups with children from grades one through six. When asked, "How do you know if a packaged food is good for you?", kids in the older grades know to look at the nutrition label. But like many adults they don't know how to properly interpret those labels.

So when pressed further, some of the children said, "If the box looks serious you know it's healthy food." Other children said if the box was "green" then it must be healthy.

"They are making sophisticated evaluations about why something is

healthy or not healthy. These evaluations are intelligent, but pretty much flatly wrong," says Elliott.

In every one of her focus groups, all the children voted Chocolate Lucky Charms as their number one choice out of an array of cereals—each serving containing a whopping 15 grams of sugar. "This cereal would definitely be considered of poor nutritional quality due to the excessive proportion of calories coming from sugar," explains Elliott. Despite this fact, there are health claims sprawled across the front of the box—Whole Grains—and on the top of the box Whole Grains; 7 Vitamins and Minerals; and Excellent Source of Iron.

In her research analyzing supermarket foods targeted specifically at children, Elliott has discovered that 89 per cent of children's food products provide poor nutritional quality for kids, but the majority of them (62 per cent) still make health claims. So who is a parent to believe?

"I have three degrees in communication, and I sometimes can't tell the difference between food packaging that's healthy for kids and food that isn't," says Elliott.

At the end of her three-year study Elliott will not have the definitive answer to what causes childhood obesity. She argues that the problem is complex and multi-faceted, and banning soda-pop and junk food from kids' diets won't solve the problem. A bigger issue is how kids are taught from a young age to value and play with artificially fun food.

"I'm frequently accused of trying to take all the fun out of eating," says Elliott. She says food has long been linked to entertainment and rituals—but it shouldn't be the sole focus in an everyday eating experience. ■

Bryan Mullan, BJ/00, is a senior producer with Global National with Kevin Newman in Ottawa.

Mixing it up

BY JAMES HALE

Time was when only the animated characters from Saturday-morning TV were ubiquitous—with licensing deals on everything from lunch boxes to calendars. Today, chefs rule. While popular culture has long embraced the occasional charismatic cook like Julia Child, Jehane Benoit and Graham Kerr, we've never seen the likes of foul-mouthed foodie Gordon Ramsay, lard-loving hedonist Mario Batali or everyman Jamie Oliver before. With TV channels devoted to cooking shows and cookbooks flying off the shelves, it's clear we've become food obsessed.

Janet Podleski, BA/88, and her sister Greta—stars of the Food Network show *Eat, Shrink & Be Merry* and numerous spinoffs—have ridden the wave to success, but they've kept their sights trained on health as well as marketing.



before being discontinued.

The fact that *Looneyspoons* has disappeared from circulation is indicative of how attitudes toward nutrition have changed in the past decade. "The focus has shifted from low fat to realizing what is good fat," says Podleski. "Now, science has recognized the importance of removing sodium from your diet and adding fibre."

Some of these insights came firsthand, when she enrolled in the Canadian School of Natural Nutrition in 2002. Now a registered nutritionist, Podleski admits that she's become

more holistic in her outlook, a shift that was reflected in the pair's decision to focus on better eating in the 2005 book that spawned their TV show—what they call "the first-ever know-carb, know-fat cookbook."

Along with sharpening their focus on health-conscious cooking and eating, the Podleski sisters have mastered the art of the spinoff. Following up on the success of their second book—*Crazy Plates: Low-Fat Food So Good, You'll Swear It's Bad for You!* (a finalist for the James Beard Foundation

Attitudes toward **nutrition** have changed in the past decade.

cookbook award)—in 2001 the pair introduced *Crazy Plates* frozen food, which was named the best new product by the Canadian Grocery Industry. More recently, they've added a line of kitchen gadgets, and this winter will see the launch of a line of greeting/recipe cards marketed through Hallmark.

"We would never have thought it would come to this when we were struggling to get that first book published," says Podleski. A self-confessed "control freak," she says time management has become one of her biggest challenges. "It has become trickier and trickier to do because I'm really fanatical about eating right and getting my exercise everyday. We're lucky that we have a really good team and excellent partners, and you have to have faith that everyone's moving in the same direction."

One of the secrets of the sisters' success is that they don't allow themselves to rest on what has worked in the past. After three seasons, they are preparing to change the format of their TV program, and they're looking to the internet as a way of spreading the gospel of healthy eating. "There's huge potential there, but the thing is always how to monetize it." ■

James Hale, BA/77, is an Ottawa-based writer and editor.



Janet Podleski, BA/88, and her sister Greta—stars of the Food Network show *Eat, Shrink & Be Merry* and numerous spinoffs.



The mindful path

BY KRIS FOSTER

The paths taken by Richard and Pamela Joho have led to a love of education and a passion for the humanities. On October 28, 2008, the Johos announced a multimillion-dollar gift to Carleton's College of the Humanities that will establish a scholarship for students who are pursuing a classical liberal arts education.

Through lifetime and planned giving arrangements, the bulk of their life savings will be donated to the college. In time the gift will endow the scholarship, covering the full cost of an undergraduate degree—including four years of tuition, housing, meals, textbooks and personal expenses—for students in the College of the Humanities.

Thanks to the Johos, the paths taken by Carleton's future scholars in the College of the Humanities became a lot brighter. →

For days prior to the announcement that they would donate their entire life savings and possessions to Carleton University's College of the Humanities, Richard and Pamela Joho reminisced about the roads they have taken during life's journey.

"There are so many roads you can take in life," says Pamela. "And you never know as you start down any given road whether it will end up being a main road, a side road or a dead end."

The main roads, explains Pamela, are choices that end up being the underlying themes of life, the decisions made that are still important to you years later. The side roads—short detours perhaps—are important when followed, and you may enjoy and learn from such trips, but ultimately the journey on these paths doesn't last long. The dead ends, they just aren't for you. They are, however, of value in that they lead you to the realization that there are some places you don't want to go and some things you aren't interested in pursuing.

So what were the main roads in the lives of the Johos? "Actually the announcement comes pretty close," says Richard, "and when we got married. The gift represents everything we worked so hard for and it is so satisfying to know that it is going to a good cause."

Pamela is quick to agree, and jokes that marriage was like the scene in *Butch Cassidy and the Sundance Kid* when the title characters jump off a cliff into a river holding hands—

choose a road and trust in your judgment, trust yourself and each other, and trust in what you're about to do.

"In a sense the main roads we have taken culminated with this gift," Pamela says.

So, what roads led the Johos—who have no previous connection to the university—to Carleton? The short and simple answer is a Google search. But the long answer is more interesting.

"We started to look around in the early '90s. We had been casually shopping around for the past 15 years," says Richard of the process of determining which cause to support. "We were asked why we chose education, with so many other charities out there," he continues. "We are not Warren Buffett or Bill Gates, we had to pick something. Education has meant so much to us that we chose to support that."

About three years ago window shopping evolved to active pursuit.

"What drove that was the realization that we had not yet done our wills," explains Pamela. "We realized that we really needed to do something about our wills and sort out which university we would support."

After searching high and low for a humanities program that matched closely with the Johos' priorities and ideals, they still hadn't found what they were looking for. They admit that they nearly gave up their search. "Dick actually said: 'It is so hard to give our money away, maybe we should just give it to the humane society or something,'" says Pamela.

That all changed when Pamela typed the key words "liberal arts humanities college" into a search engine. Thousands upon thousands of results appeared. Carleton's College of the Humanities was one of them. Upon meeting the

faculty, staff, and in particular the students at Carleton, the Johos knew they found the right match.

"We have met absolutely first rate people here. Those kids are amazing," says Richard.

"We knew from the beginning that we wanted to support students," explains Pamela. "By supporting students you are building your citizens and future leaders."

That is a university's role; its most important role, to develop citizens.

"To invest in students is to help solve real-world problems," says Richard. "The problem we are trying to solve is to get more people who are well trained. We face a challenge not often cited, like global warming, that threatens our future—the need for far more good bright people, well-rounded and well trained, to provide leadership and to tackle our world's current and future problems."

The Johos are certain that the interdisciplinary approach of the humanities program at Carleton addresses this issue. "This type of education," says Pamela, "teaches you how to know, to ask broad questions and to think in a broader context."

Another thing is certain, the human condition and the experience of being human do not have the potential to be obsolete—an education in the humanities is an education for life.

Through the investment in people, the longevity and impact this gift will have is astounding. Starting in 2010, the Richard and Pamela Joho Scholarship will be awarded to humanities students who demonstrate both academic merit and extra-curricular and/or community involvement. This scholarship is expected to support hundreds of students.

"It's a way to make our contribution little by little," says Richard. "The people we are going to be helping are 20 years old—that's going to pay dividends for 50 years."

"You never know where the roads lead you, because you have not yet reached the end of the journey. But for us this gift is a great close-to-the-end destination" says Pamela.

"Let's call it a waypoint rather than an end destination," says Richard with a laugh. "We're still on the journey." ■

An education on the humanities

The College of the Humanities was founded in 1996 to provide an undergraduate education for students drawing on all the traditional arts subjects through the Bachelor of Humanities program. The interdisciplinary character of the college has recently been enhanced by the addition of a Bachelor of Arts in Greek and Roman studies and a Bachelor of Arts in Religion. Thanks to this rich mix of programs, the college allows faculty and students to benefit from each other's study of the various arts disciplines and fosters collegiality among its students through small discussion groups and their own college precinct.

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Future of food

BY SCOTT FOSTER

Carleton's new Food Science and Nutrition program responds to evolving demands of the food industry.

Food safety rocketed its way to the forefront of public consciousness after 20 deaths were linked to a nationwide outbreak of listeriosis last year.

While we now know the outbreak originated from contaminated meat products, scientists and policy-makers continue to grapple with some of the more difficult questions that have arisen from this tragic incident, including: how do we prevent this type of tragedy from happening in the future? And, if such an event does happen, how do we best manage the unfolding aftermath?

Faculty and students from Carleton's new Food Science and Nutrition program will be looking for answers to these and other tough questions.

"The *Listeria* outbreak is one example of the profound complexities around food safety," says David Miller, a chemistry professor and NSERC industrial research chair who co-developed the program's course outlines with Bob Burk, BScHons/80, MSc/82, PhD/91, chair of Carleton's chemistry department. "The food landscape is changing on us. Not so long ago, much of our food came from within 100 miles of where we live. Today, an increasing amount of our food is coming from other countries."

This means that more foreign strains of bacteria have the potential

to enter Canada's food supply, increasing the demand for food surveillance and testing, says Miller, adding the Food Science and Nutrition program emphasizes risk assessment methods that can be applied to foods that enter Canada from abroad.

Bacteria strains will continue to evolve, increasing the likelihood that new strains found in imported foods will continue to be introduced into Canada's food supply—some of which may be new to Canadian food scientists, adds Burk.

"Bacteria will always be present, so we really must be vigilant forever," he says.

"There is simply no way to eradicate potentially harmful food-borne bacteria," adds Miller. "But the more we as scientists understand and analyze these events, the more we can detect, prevent and respond to them."

KNOWING THE RULES

The overall aim of the Food Science and Nutrition program is to prepare students for this dynamic environment. It is not enough, says Miller, to focus solely on the science of food. Food scientists must also know as much as possible about the complex regulations that govern the ways in which food is processed and distributed to grocers, he says.

"People working at all levels in food must understand a lot more about (the rules) than they did even a decade ago," Miller says, pointing to the growing complexities of the U.S. Patriot Act as one example. Indeed, this act applies very strict rules to any foreign foods entering the U.S.

In response to such complex and stringent regulation, the Food Science and Nutrition program aims to ensure graduates understand this part of the equation by combining the fields of chemistry, biology, biochemistry and nutrition with that of economics and public administration, Miller says.

The university is in a unique position to offer budding food scientists an opportunity to study the policy side of their field, thanks to Carleton's highly regarded school of public policy and administration.

Along with new regulations, there are also new food products and new trends that will require a depth of knowledge and an integration of all food science principles, agrees Tyler Avis, chemistry professor. Along with Apollonaire Tsopmo, who is also a chemistry professor, Avis began delivering the program's first courses this winter. Tsopmo and Avis joined Carleton's faculty last July.

History of food

BY MARY GAZZE

What did you have for supper last night? Chicken? Steak? Lasagna? Maybe gruel?

That last one probably doesn't really sound appealing to you, but peasants in 18th century France didn't come home and ask "what's for dinner?"

"Probably 90 per cent of their diet would've been grain," explains Roderrick Phillips, professor in the department of history, who specializes in the history of food and drink.

"The question they would've posed is 'is there enough food to eat tonight?' There were long periods of famine and

food shortage," he says.

From gruel to gourmet, times and tastes have changed, and the variety of foods available to us has grown exponentially thanks to the opening up of borders that began in Europe in the 17th and 18th centuries.

"The mass of that population would be shocked at the huge variety of dishes we have today," says Phillips, who just signed a publishing deal and is working on a book that explores changes in food and the European diet over the last 1,000 years. Beyond covering the changes in what kind of cuisine people consume,

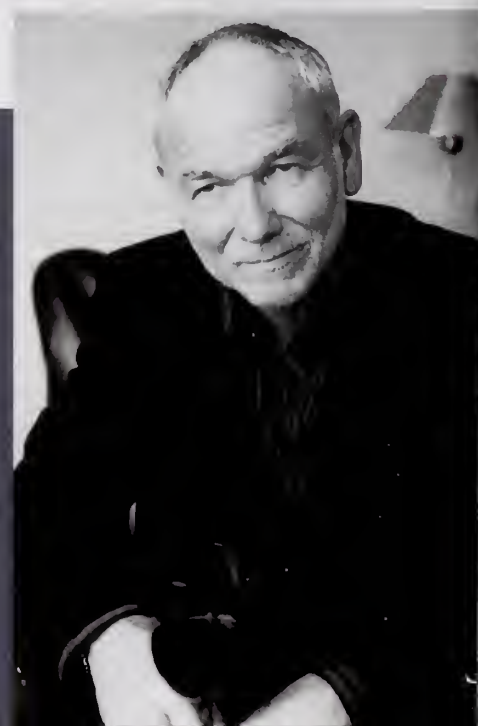




Photo: Luther Caverly

David Miller, chemistry professor (pictured above), co-developed the the Food Science and Nutrition program's course outlines with Bob Burk, chair of Carleton's chemistry department.

RESPONDING TO AN OUTBREAK

Outbreak communications, or crisis response, is one area in which future food science practitioners will need to be skilled, says Burk. In fact, this subject will also figure prominently in the program's curriculum. One only needs to look at the recent *Listeria* outbreak to realize how critical this area is.

"(The company which owned the contaminated processing plant) got the information out there to the people who needed it," Burk says. "They ensured it was in a manageable format. They explained what these events actually mean. They didn't make people

panic, but they did not underestimate the risks either."

While problems like the adulteration of food with degraded melamine will be hard to predict, we can still ensure we have the best highly trained people in place to respond to and manage these surprises when they arise, agrees Miller, referring to a recent incident involving tainted Chinese milk products.

Through teaching future players in the food industry and through fundamental and applied research in various fields relating to food, academic programs such as food science provide new knowledge that researchers and

future graduates can pass on to the public, adds Avis.

"This new information would allow the public to more easily form a well-founded opinion on the current state of the food industry and gain confidence in the food system. This should help distinguish between claims, speculations, expectations, fears and scientific data, which would allow the public to separate fact from fiction and make more informed decisions about the food industry and the products they purchase and consume." ■

Scott Foster, MJ/01, is an Ottawa-based freelance writer.

the book will examine how cuisine's role in our society encompasses more than simply filling hungry bellies.

"It's about what food can tell us about social change," explains Phillips.

Through the ages food has brought people together. It helps people celebrate at banquets or restaurants, and lets families spend time with each other at the dinner table. But food can also have amazing positive power—even bringing down ethnic barriers. He cites England's colonial history in India, and the curry, tandoori, butter chicken and other dishes that were brought back to

Britain by newcomers.

"In some cases in the U.K., the most popular cuisine is actually Indian food," he explains. "It's overriding any racism within English society. It seems people who object to immigrants don't mind eating immigrant food."

And today's menus not only reflect a change in how we value each other's cultures, but also how we deal with societal problems. Take, for example, how we cope in the current recession. If it lasts a while, we may see another shift in the kinds of food we eat. Phillips says people won't cut back on the amount

of food they eat, they'll just spend less. That means more people will reach for the ground hamburger over steak, and pasta over fresh vegetables.

"They're eating more cheaply and looking for bargains, eating light tuna instead of white tuna because it's cheaper by the can," explains Phillips.

But here's some food for thought: whatever concessions you might have to make in your diet to save money, at least you have more options than gruel. ■

Mary Gazze, MJ/07, is producer for CBC television news in Toronto.



Nose jobs

BY KRIS FOSTER

People around the world ask the same question on a daily basis: "Is the milk bad?" A quick sniff gives us a fast and reliable answer. The sense of smell is very powerful and often taken for granted. We simply follow our nose, because it always knows...but so does an electronic nose (e-nose).

E-noses, first developed in Britain in the 1990s for use in the food industry, mimic the olfactory system by using a series of sensors that can be trained to detect specific odors and even bacteria that may be present in the food we eat.

Adrian Chan, associate professor in the department of systems and computer engineering, sniffed out an opportunity to develop such a nose in partnership with the Canadian Food Inspection Agency (CFIA). With outbreaks of food-borne illnesses making headlines across the country—*E. coli*, *Salmonella* and *Listeria*—it is a natural partnership that presents many public health benefits.

"We are working with the CFIA to develop an e-nose that can rapidly detect and identify bacteria," says Chan.

The current testing system—in which a food sample is sent to a lab where a trained technician cultures bacteria from the sample and then studies what grows—is time consuming and expensive; thus, under the current system screening is typically performed using random samples.

"If we can develop something that is cost effective and tests continually rather than randomly, then we can test everything and detect a problem immediately, well before contaminated food gets consumed," explains Chan.

"With samples from the CFIA, we now know that the e-nose can detect and identify *E. coli* and *Listeria*," says Chan. "The next step is developing techniques and system robustness that will differentiate bacterial species and their concentrations."

Chan is quick to point out that applications for the e-nose aren't limited to detecting food-borne bacteria. "Eventually, we want to look at whether an e-nose can detect diseases or be used for continual monitoring of wounds to detect infection," he explains.

The e-nose can also be used to monitor behavioral patterns of everyday living. Smart environments, as they are called, have sensors embedded throughout that are connected through a network that provides remote monitoring. One such example is the "smart apartment"—an Ottawa-based research partnership in which Carleton is involved—in the Élisabeth Bruyère Health Centre.

"Smart environments can support older adults or recovering patients in their home," says Chan. "The electronic nose can detect everyday activities like cooking and cleaning, and can alert caregivers to alterations in routine, or to problems of health and hygiene. This is non-obtrusive compared to methods that use video cameras."

Certainly, the potential applications are as varied as the number of smells in the world. "There is a report of a dog that could determine whether a person had cancer by smelling," says Chan. "Imagine the utility of e-noses. They could have many applications." ■

Adrian Chan, associate professor in the department of systems and computer engineering, is in partnership with the Canadian Food Inspection Agency to develop an electronic nose.

Photo: Luther Caverly







Craving insight?

BY KRIS FOSTER

It hits in the middle of the afternoon. Or maybe just after work. It's insatiable.

It just won't leave you alone and you can't get it out of your mind...unless you give in. When you finally succumb, it feels good.

When your craving hits what food first comes to mind? Is it sugary? Is it fatty? Is it salty? It is definitely tasty. And it is not likely to be broccoli.

For Alfonso Abizaid, assistant professor in the department of psychology, it's souvlaki. But the "what" isn't the important question for Abizaid, his interest is in the "why". Why do we crave?

The simple answer is because of our highly scheduled, over-regimented lives. We eat breakfast at 7 a.m., lunch follows at noon and supper is eaten at 6 p.m. "By the time you are getting close to a meal you are really craving food. Your body goes into alarm and says 'need calories, need calories, need calories', it really is an expectation," explains Abizaid, who focuses his research on the connection between the digestive system, the brain and food intake.

"One hormone produced in the stomach, ghrelin, is interesting because unlike all other hormones that modulate intake, ghrelin is the only one that makes you eat," says Abizaid. "If all others work like a brake, ghrelin is the gas pedal. It makes you hungry, and it makes you hungry for your favourite foods."

His research has indicated that ghrelin increases the activity of the brain's reward circuit and triggers the release of a neurotransmitter called dopamine, the brain's feel-good cells. By increasing the release of dopamine, ghrelin doesn't just signal to the brain that it is time to eat, it may also evoke memories of how pleasurable a meal is to produce cravings.

"The reward is the food and dopamine is released in anticipation of that to produce the cravings," says Abizaid. "Presumably if ghrelin is high just before meals, then more dopamine will be released and the cravings will be stronger."

And not by coincidence, this is how cravings for drugs, sex and even gambling work too.

"The chemistry underlying the craving for drugs is exactly the same as the chemistry of the mind when craving food," explains Abizaid. "The National Institute for Drug Addiction has done brain imaging of addicts and people considered obese. The addicts were shown images of drugs, and the obese were shown pictures of their favourite foods. The exact same areas of the brain got turned on."

Abizaid is optimistic that the research into cravings—food, drugs, gambling or otherwise—will help people control addictive behaviours and contribute to the improvement of overall health.

"There is still work that needs to be done, but this research may lead to treatments to help limit overeating and drug addiction," says Abizaid. ■

What's in the package?

By Ryan Ward

It may come as a surprise, but Canada has a poor record on resource use and waste creation compared to most countries. At the 2008 international climate talks in Poznań, Poland, the Climate Change Performance Index ranked only Saudi Arabia worse than Canada for climate change planning.

There are many issues contributing to this poor track record, one of which is, surprisingly, product packaging, according to Brian Burns, associate professor in the school of industrial design. "Because of Canada's extreme climate, apparent abundance of resources and large shipping distances, products here require a lot of packaging. Unfortunately, too much of it is unnecessary, and too much goes into landfills," says Burns.

In July 2003, Burns went to Australia to teach at the Royal Melbourne Institute of Technology University and work with the Centre for Design Research Unit. Down under, Burns recognized that Australia was ahead of many other countries in the development of environmentally sustainable product packaging protocols. Burns was able to work with Nestlé—developing packaging protocols to track the environmental implications of product development—and the Australian Post Office—designing wine bottle transporters.

In contrast to Australia—where sustainable product life is taking shape—Canada has a long way to go, explains Burns. "We are starting to think about the materials and resources being used, and to a limited extent about the ramifications when we finish using them," says Burns. Consider the fast food industry. "Fast food packaging has made some changes to appear greener, but we need to reconsider why we have so much fast food in packaging at all." He suggests that companies need greater controls on what they can package their products in.

Consumers are just as wasteful in their own homes. "There have been several studies that reveal that many of the developed countries, including Canada, throw out more than 30 per cent of the food we buy," says Burns. And for all the wasted food, there is typically wasted packaging to accompany it.

There have been improvements, but there is still a long way to go in order for Canada to move towards a more sustainable packaging environment. At Carleton, Burns is doing his part by having his students work on projects related to a mock city called Ecoville—a sustainable place to live—and deal with several areas of sustainability, including in the household and the food we buy, store and prepare. According to Burns, the sustainability issues that the students are learning are fundamental for our future.

"We are living unsustainably and the resources aren't there to continue life this way," says Burns.

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Class acts

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A taste for knowledge

BY KRIS FOSTER

Marieka Sax has a full plate right now. Sax just finished and defended her master's thesis that examined agricultural rituals and the importance of feeding in Andean society.

"Feeding, the act of giving and receiving food, plays a central role in being a competent social actor, building and maintaining relationships, inter-household exchange and accessing the labour of others," explains Sax. "Feeding is also a medium of communication between people and divine powers, and is indeed central to the very notion of productivity and prosperity in the Andes."

Incidentally, she says, it wasn't her intent to study this topic. It occurred to her while doing fieldwork in Peru. "I was constantly, and generously, being fed by different households that were in some degree of competition to



Marieka Sax is teaching a first-year seminar on *Practice, Experience, Power and Symbol: The Anthropology of Food and Cuisine*.

feed me," explains Sax. "I realized that these feedings were a way to draw social actors into a relationship of reciprocal obligation—very similar to the reciprocal relationships that Andean peasants establish by feeding tutelary

mountain spirits."

Sax, back from her Peruvian adventure, was well-fed and seeing food from a different perspective—one that she is now sharing with Carleton students through her first-year seminar

Class notes

1960s

Joan Hauser, BSc/69, retired after 39 years as a senior cytotechnologist (cancer detection). She currently resides in Kingston, Ont. where she is enjoying her new lifestyle.

1970s

Alexander Johnstone, BAHons/73, MA/79, was appointed to the Immigration and Refugee Board of Canada at the Montreal regional office for a three-year term.

Shirley Siegel, BA/73, was appointed director of the human resources department at International Monetary Fund.

Robert Jackson, BCom/75, MA/77, recently retired from the federal public service where he was a senior combines investigator. He continues to work as a consultant advising on competition policy.

John Ferguson, BJ/77, was nominated to the board of directors of Cleanfield Alternative Energy Inc.

Roger Thomas, BA/78, was appointed a director of Gold Bullion Development Corp.

Claude Larouche, MSc/79, has accepted the position of executive vice-president at Northern Star Mining.

1980s

Tim Granger, BEng/80, was appointed as chief operating officer and vice-president, asset optimization, for Paramount Energy Trust.

Naseer Ahmad, MA/81, completed construction on the largest mosque in Canada—built in Calgary, AB. He lives in Vaughan, Ont.

Colleen Delaney, BCom/81, has joined A. John Page & Associates Inc., a boutique insolvency restructuring firm in Toronto, as a senior vice-president.

Neil Matheson, MA/81, was appointed senior vice-president, investment strategy, at Standard Life Investments Inc.

Joanna Katsanis, BAHons/86, MA/87, is an associate professor of clinical psychiatry at the University of Arizona in Tucson, Ariz.

David Foss, BAHons/89, was named the 2007-08

Teacher of the Year for the Alamo Heights Independent School District in San Antonio, Texas, and was named the runner up Teacher of the Year for 2008 by the Texas Association of Public Schools. He lives in San Antonio with his partner, Milly, and their two children, Garrett and Kacey.

Tamara Guttman, BA/89, moved to Rome in the fall of 2008 to take up her foreign service assignment as deputy head of mission at the Canadian Embassy to Italy.

1990s

Ron Hoffmann, MA/90, deputy head of mission at the Canadian embassy in Kabul, has been promoted as ambassador to Afghanistan.

Brian Gusko, BA/91, was appointed as an independent director of Grenville Gold Corporation.

Dong Liu, MJ/91, was called to the Ontario bar in June 2008. In July she opened her own law firm, Dong's Law Office, in Ottawa (donglaw.ca).

David Sharpley, BCom/91, was appointed senior vice-president, marketing and product management, at Bridgewater Systems.

Scott Morin, BCom/92, was appointed vice-president of sales at Titus Labs.

on *Practice, Experience, Power and Symbol: The Anthropology of Food and Cuisine*.

"Although food is central to the lives of virtually all people the world over, here in the West the everyday significance of food is often overlooked," explains the contract instructor, department of sociology and anthropology. "People often don't consider the bodily experience and practical knowledge of food or the part food plays in making and maintaining family ties. Food and food-related activities are central to what it is to be a member of a particular family or community."

Whether we realize it or not, food is discussed—and debated—on a daily basis because it is connected to so

many other topics: genetics, chemistry, biology, policy, economics, globalization, business, health. The list goes on and on.

"Media are filled with our concerns over food: health and safety, affordability and access, morality and ethics, environmental sustainability and international peace and security," explains Sax. "This class aims to engage students in both the everyday significance and the cultural politics of food and show them how food connects them to other people, to other places and how it opens doors to all topics no matter what you're interested in."

"Food is so many things beyond daily sustenance. It is a bodily experience and practical knowledge; it is a sym-

bol and a medium of communication; it is sometimes a gift and other times a commodity; and it is also a political issue," says Sax.

While she is glad that people are starting to discuss and respond to what food means, she isn't surprised. "Food is implicated in some of the most pressing issues facing humanity today, such as water shortages, peak oil and international political stability. It is central to the experience of what it means to be human."

When Sax finishes sating the appetites of her knowledge-hungry students, she hopes to quench her own thirst for knowledge by pursuing a PhD at Carleton in fall 2009...just to keep her plate full. ■

Call for volunteers

Do you have the write stuff?

Carleton University Magazine is looking for graduates to volunteer their enthusiasm and energy to the Editorial Advisory Committee (EAC).

EAC members provide creative input on each magazine by writing feature articles, proofreading content, and offering advice on themes, content and design.

Interested alumni should submit a résumé and brief cover letter by March 31, 2009, to:

Editor, *Carleton University Magazine*
Department of University Advancement
610 Robertson Hall
Carleton University
1125 Colonel By Drive
Ottawa, ON K1S 5B6
magazine_editor@carleton.ca

Ron Kaine, BA/92, and Alexis Petersen recently moved to a new house on Lake Ontario in Stony Creek. He works at Bell Canada as associate director, credit solutions, in the residential accounts receivables management department.

Ralph Nevins, BCS/93, had a solo exhibit of photography at the CentrepoinTE Theatre Gallery from December 5, 2008 to January 14, 2009.

Kent Smith, BCom/93, was promoted to associate partner at PricewaterhouseCoopers, based in Ottawa.



Chris Adams, PhD/95, now lives in Winnipeg with Sue and their four children. He is with Probe Research and is an adjunct professor at the University of Manitoba and the University of Winnipeg. His new book *Politics in Manitoba* has just been released by University of Manitoba Press.

Catharine Farrow, PhD/95, was appointed senior vice-president, corporate development and technical services, at FNX Mining Company Inc.

Elaine Silver-Levine, BA/95, her husband David

and their daughter Amelia, moved to the Atlanta, Ga. area and are expecting another child.

Luke Clare, BA/96, was appointed business development officer for the National Capital Region at Gowlings.

Carolyn Sisley, MA/97, received her Certified General Accountant designation at the CGA Nova Scotia graduation gala on October 25, 2008. She is the senior administrator, department of psychiatry, Dalhousie University in Halifax, N.S.

Robert Astroff, MA/99, is the president of Astroff Consultants Inc., an educational consulting firm offering advice for applicants to professional and undergraduate university programs in Canada, the United States and overseas. He would love to hear from classmates at robert@astroffconsultants.com.

Pradeep Chand, BA/99, of Lang Michener LLP and part-time professor at Carleton, received the Young Practitioner of the Year award at the first South Asian Bar Association Legal Awards.

2000s

Darwin Green, MSc/01, was appointed vice-president, exploration, at Constantine Metal Resources Ltd.

Dawn Germain, BAHons/04, won an Athena scholarship, recognizing female students for their scholastic excellence, leadership qualities and community involvement.

Andrew Kear, MA/04, has been building his career as an art curator and recently landed the job of associate curator of historical art at the Winnipeg Art Gallery.

MARRIAGES AND ENGAGEMENTS

Shelley Civkin, BAHons/79, recently got engaged to Harvey Sotolov. They are planning a summer wedding in Vancouver, B.C. in 2009.



Åsa Frostfeldt, BAHons/00, and Rikard Lundgren were married in Sandhem, Sweden, on August 16, 2008. The couple lives in Stockholm. She is the manager of a project that implements the Canadian victim/witness assistance program and he works as a recruitment consultant.

A recipe for success

BY ERIN SWEET

Armed with an entrepreneurial spirit and a passion for food, Heather Maclachlan co-founded and co-owned Epicuria, Fine Food Store and Catering in Ottawa. Under her guidance for almost two decades, Epicuria has been offering clients high-quality, convenient meals focusing on local produce and seasonal ingredients. Although the business will still exist, Maclachlan, like all great chefs, is trying her hand at a few new recipes after recently selling her part of the company.

Although she's not certain what new challenges will be in store for her, Maclachlan has all the right ingredients for success. She is a trained chef, having received the grand diploma from the Cordon Bleu Cooking School in London, England and has a BA from York University. In

1999, she completed Carleton's Management Development Program for Women and more recently was named the 2007 businesswoman of the year in the entrepreneur category by the Women's Business Network of Ottawa.

"Being an entrepreneur is so much more than what it was in the past," says Maclachlan. "When my father owned a business, one would start at the bottom and work one's way up. Many women are changing that."

More so nowadays, women entrepreneurs are creative, willing to

take risks and step out of their comfort zones and embrace new adventures, says Maclachlan.

She attributes the management program at Carleton for equipping her

with transferable skills that she can take from the kitchen and superimpose them elsewhere. However, she's quick to add with certainty that food will still be a big part of her life and with that comes the glamour.

"Chefs are becoming Hollywood stars because everyone loves to eat."

Maclachlan's culinary experience dates back to her childhood when she learned to cook for her family of seven. She did so with the intention that she could out cook her mother. Always keen to accept a good challenge in the kitchen, Maclachlan doesn't shy away from making complicated recipes at home. In part, because she attests that "I relax when I cook."

But for many, having to routinely respond to "What's for dinner?" is anything but calming.

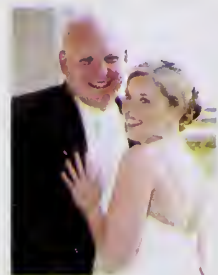
"We're heading into an economy where people are choosing not to go to restaurants, but are also choosing not to cook," says Maclachlan.

As an alternative, take-home cuisine is on the rise, offering consumers a healthy alternative to eating when they have little time to devote to shopping and cooking. "Everyone places a



Photo: Michelle Valberg

Heather Maclachlan was named the 2007 businesswoman of the year in the entrepreneur category.



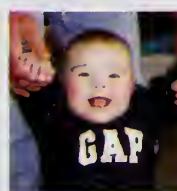
Lauren Furtney, BA/04, married Corey Spaxman on May 17, 2008, in Cayuga, Ont. She teaches high school English and history. The couple resides in Jarvis, Ont.

Leanna Karremans, BAHons/05, married Erron Walker in Richmond Hill, Ont. on September 13, 2008. The couple lives in Toronto.

Harmit Khera, BA/07, married Harjottan Sandhu on August 30, 2008. The couple lives in Brampton, Ont.

BIRTHS

Simon Giggs, BA/87, and Hanne Jakobsen-Giggs are pleased to announce the birth of Mathilde, on October 27, 2008. She is their third child and joins brothers Kristoffer Thomas (6) and Oskar (3). The family lives in Toronto.



Theresa Fritz, BJ/89, and her husband Scott Robinson are pleased to announce the birth of Shane William, on April 19, 2008. The family resides in Carleton Place, Ont. Theresa is the associate editor of the Kanata,

Stittsville-Richmond, Arnprior and West Carleton EMC newspapers.

Mark Weldon, BA/89, and his wife Kelly Weldon are thrilled to announce the birth of their son, Parker John, on July 13, 2008. The happy family resides in Brockville, Ont.

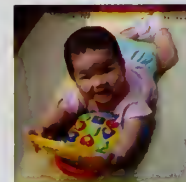
Jennifer Bain, BJ/90, and her husband Rick MacKenzie welcomed Hazel on March 6, 2008, a sister for Lucy. The family is living on their bison ranch in Alberta while Jennifer has a year off from her job as food editor of the Toronto Star.

Sean Burrows, BAHons/92, and **Natasha Robb, BA/92**, are late, but thrilled to announce the arrival of their second daughter, Holly Alice,



born on March 28, 2003. A partner in fun for big sister Hannah.

Sarah Christie, BA/92, and **Steve Christie, BA/92**, welcomed triplets, Andrew, Jason and Matthew, on September 15, 2007. Sarah manages a resort spa and Steve is a head golf professional. The family resides in Niagara-on-the-Lake, Ont.



Zhen Wang, MA/93, and his wife Lianbo Xu are pleased to announce the birth of their first child, Angelina Zhiyuan, on February 20, 2008. The family lives in Sudbury, Ont., where he teaches at

Laurentian University.

Christa Delaney, BJ/99, and **Trevor Sanders, BAHons/98**, welcomed their beautiful baby girl, Charlotte, in June 2008, a sister for William. The family resides in Nepean, Ont.

Nery Muñoz Arguello, MA/99, and her husband Daniel Perez are proud to announce the birth of their beautiful son Pablo Gael in Mexico City on September 19, 2008.

value on time," adds Maclachlan.

Although more consumers may be leaving meal preparation to someone else, with the recent contaminated food issues, the recalls and the rise of food allergies, consumers have a heightened awareness when it comes to food safety.

Maclachlan attributes this in part to the internet making information readily available and easily accessible. She also remarks that consumers are more inquisitive when it comes to freshness and best-before dates.

Despite juggling her own family, work and volunteer commitments, Maclachlan rarely took prepared food home when she worked at Epicuria. Instead of trying to simplify mealtime, she takes pleasure in consulting cookbooks produced by restaurants, seeking inspiration from master chefs such as Jamie Oliver and Julia Child, and experimenting with different foods.

"I love going to a cheese store and buying different cheeses and putting them with pears and nuts and a great wine."

With a trained eye, it's easy for her

to decipher from a quick glance at a recipe whether or not it's going to work. And despite the trend toward consuming lighter fare, there's no denying that "everyone loves cream and butter," says Maclachlan. "Sometimes people go out to indulge. We're talking about everything in moderation." ■

Erin Sweet, BJ/98, MJ/00, is a communications advisor with Human Resources and Social Development Canada in Ottawa.

2

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Kathleen Robson, BA/01, and Kevin Chlebovec, BA/01, are happy to announce the birth of their daughter, Chloe, on March 27, 2008. The family currently lives in Toronto. Kathleen is a teacher with the Toronto District School Board and Kevin is with the Canadian Broadcasting Corporation.

Kathleen Baldwin, BA/02, and Carl Kazmierczak, BCom/03, welcomed their first son Charlie on November 7, 2008. The happy family resides in Oakville, Ont.



Johanne Grenier, BA/07, and her husband Guy Castonguay, are happy to announce the birth of their first child, Ariana Lynn, on June 12, 2008. The family lives in Stittsville, Ont., where she is on leave from the Ottawa Symphony Orchestra, and he works as a translator.



IN MEMORIAM

Melissa Mayer, BA/05, on April 25, 2008.

William Kinsman, BA/71, on September 10, 2008.

Martin Doherty, BCom/48, on September 12, 2008.

George Young, BA/54, on September 15, 2008.

George Shaw, MSc/81, on September 18, 2008.

Lorraine Robertson, BAHons/65, on September 19, 2008.

Rhena Charland, BA/81, on September 19, 2008.

J. Monette, BCom/50, on September 30, 2008.

Rose Lesage, BSW/53, MSW/54, on September 30, 2008.

Gerald Doucet, MA/69, on October 4, 2008.

Courtney Gilliatt, MA/78, on October 17, 2008.

Eric Vivian, BA/67, on October 22, 2008.

William Stewart, BA/51, on October 24, 2008.

Frank Mountain, BA/73, on October 31, 2008.

William Stinson, BEng/50, on November 1, 2008.

Stephen Culley, BA/76, on November 11, 2008.

Donald Attfield, BA/88, on November 11, 2008.

Kristjan Anderson, BSc/79, on November 14, 2008.

Iain Beaudoin, BEng/03, on November 14, 2008.

Wayne Campbell, BA/74, on November 15, 2008.

James Wadden, BScHons/68, MSc/71, PhD/77, on November 16, 2008.

William McGuffin, BJ/54, on November 26, 2008.

Victor Garvin, BCom/50, on November 28, 2008.

Mary Spicer, MA/71, on November 28, 2008.

Gerard Mulvihill, BAHons/90, on December 4, 2008.

Lynn Black, BScHons/75, on December 11, 2008.

John Kirwan, BSc/61, on December 14, 2008.

Sue MacNeil, BAHons/94, on December 16, 2008.

Bernard Daly, MA/71, on January 2, 2009.

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at magazine.carleton.ca

2009 alumni calendar

For more information visit alumni.carleton.ca/events. To RSVP call 866-CU-PROUD or 613-520-4047 or email cu_proud@carleton.ca.

FEBRUARY

English Grads Chapter
Monthly Book Club
February 10
English Faculty Lounge
Carleton University

Toronto Chapter
FOCUS presentation with Tony Bailetti
February 12
MaRS Collaboration Centre, Toronto

Alumni Reception in Kuala Lumpur, Malaysia
February 14
California Pizza Kitchen Restaurant
Alumni Reception in Istanbul, Turkey
February 21
Venue TBC

These receptions are being held in conjunction with the international admissions and recruitment office and the Canadian Education Fair in Kuala Lumpur and Istanbul.

Chemistry Magic Show, Chemistry SuperLab
Alumni Tours and Reception
February 21
Theatre B, Southam Hall/Steacie Building
Carleton University

NPSIA Chapter
Special guest Lawrence Cannon
February 23
Rideau Club, Ottawa

NPSIA Chapter
12th Annual Benefit Soiree
Special guest Nigel Fisher
February 26
National Arts Centre, Ottawa

MARCH

New York Chapter
Presentation and Reception
Special guest Roseann O'Reilly Runte
March 2
Penn Club, New York

12th Annual MAPA (Student)
Society Banquet
March 6
National Arts Centre, Ottawa

English Grads Chapter
Monthly Book Club
March 10
English Faculty Lounge
Carleton University

National Capital Chapter
CIS National Basketball Championships
Pre-game "Tip-off" party
March 13-15
Scotiabank Place, Ottawa

Wes Nicol National Business Competition
Awards Ceremony
March 24
Fairmont Chateau Laurier Hotel, Ottawa

APRIL

National Capital Chapter Leadership
Luncheon
Date TBC
Venue TBC

Journalism Chapter
"Hack to Flack" Discussion and Reception
Date TBC
Venue TBC

Industrial Design Chapter
2009 Industrial Design Graduation Exhibition and Alumni Reception
Date TBC
Venue TBC

MAY

English Grads Chapter
Monthly Book Club
May 12
English Faculty Lounge
Carleton University

JUNE

Alumni Reunion Weekend
June 5-7
Carleton University

Spring Convocation
June 9-12
Carleton University

CUAA Annual General Meeting
June 13
Carleton University

Alumni events fall 2008



40 GREAT YEARS

As part of the festivities to celebrate 40 years of architecture at Carleton University, the architecture chapter hosted the Great Grad Speaker Series featuring award-winning architect Gregory Henriquez, BArch/87. More than 200 alumni, faculty, staff and students showed up in The Pit for the presentation on October 25.



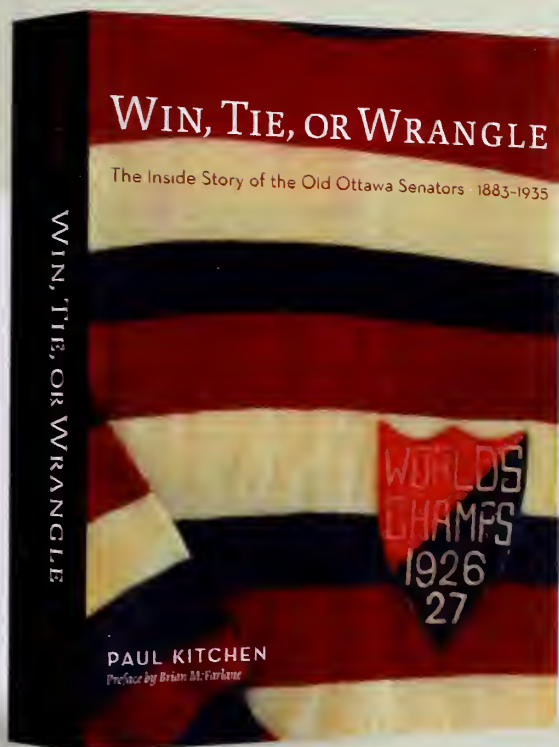
PRESIDENTIAL Q & A

On November 13, Roseann O'Reilly Runte, president and vice-chancellor of Carleton, had the opportunity to introduce herself to more than 160 attendees as the featured speaker at the Leadership Luncheon. With Jane Gilbert, BJ/80, Carleton University Alumni Association president, acting as the moderator, an informal Q & A session took place between the president and luncheon guests.



HISTORY OF ALCOHOL

The Faculty of Carleton University Speaker Series (FOCUS) made a stop at the Teatro Bistro in Calgary on October 29. Featured speaker Rod Phillips, professor, department of history, shared his knowledge on the history of alcohol with more than 75 alumni in attendance with his presentation entitled "Alcohol: From life-saver to lifestyle."



Ex libris

We are pleased to present a listing of recent books by graduates of Carleton University.

Win, Tie, or Wrangle

The Inside Story of the Old Ottawa Senators

by Paul Kitchen, BA/63

Entertaining and informative, *Win, Tie, or Wrangle* is the one and only definitive history of the original Ottawa Senators. Drawing on previously unexposed diaries, memoirs, hockey-club business records and government files, Kitchen tells the story of the capital's first hockey team from its birth in 1883 to its demise as the St. Louis Eagles in 1935.

The Carleton University Alumni Association (CUAA) has partnered with Penumbra Press to offer alumni a 10 per cent discount off the cover price. Penumbra Press will also donate \$5 from each purchase to support students in need at Carleton University. The donation will be matched by the CUAA and by the province of Ontario.

Penumbra Press (Manotick) 2008; \$40.50 (discounted price); penumbrapress.com

The Street Stops Here
A Year at a Catholic High School in Harlem
By Patrick McCloskey, BA/75

An account of a Catholic high school in central Harlem, where mostly disadvantaged African-American males graduate on time and get into college.

University of California Press (Berkeley) 2008; \$27.50; ucpress.edu/books

Poison: From Steeltown to the Punjab, the True Story of a Serial Killer
By Jon Wells, MJ/92

Chronicling the life and crimes of serial murderer Sukhwinder Dhillon, who coolly dispatched two wives, two twin infants and a friend just for insurance money. *Poison* details the trail that stretched from Canada to India.

John Wiley & Sons (Mississauga) 2008; \$21.95; ca.wiley.com

No Small Change: Pension Funds and Corporate Engagement
By Tessa Hebb, BA/95

This book examines the ability of pension funds to use their ownership position to improve the environmental, social and governance standards of today's corporations.

Cornell University Press (Ithaca) 2008; \$27.95; cornellpress.cornell.edu

Beyond Miss World
By Jennifer Hosten, BAHons/90, MA/92

This autobiography depicts the journey from being a beauty queen to becoming a diplomat and specialist in international development.

Grenada Book 2008; \$20; beyondmissworld.com

Democracy and Self-Organization: The Change of Which Barack Obama Speaks
By Robert Aziz, MA/81

In this book Aziz draws on conclusions reached about our cultural crisis of meaning in his book *The Syndetic Paradigm* to provide insight into Barack Obama's politics of change.

Robert Aziz 2008; \$12.95; robertaziz.com

Frequently-Asked Questions in Christian Theology
By William Harrison, BAHons/89

An introduction to serious theology for the general reader, Christian or not.

The Continuum International Publishing Group (London and New York) 2008; \$21.95; continuumbooks.com

A Country Girl
By Jeanne Ainslie, BScHons/62, MSc/64

The story of Angela, a woman with a vibrant sexuality and passionate joy for living.

Xlibris 2008; \$19.99; acountrygirl.com

Fred Taylor: Brother in the Shadows
By John Virtue, BJ/57

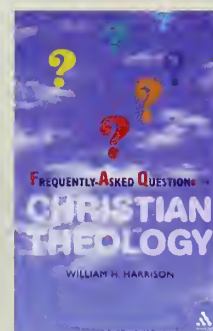
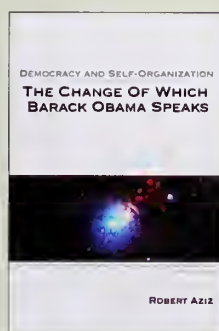
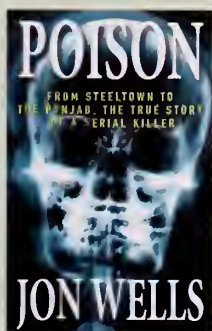
A biography of Fred Taylor, brother of E.P. Taylor, Canada's leading mid-century industrialist.

McGill-Queen's University Press (Montreal) 2008; \$39.95; mqup.mcgill.ca

The Whistling Bishop
By Emily-Jane Hills Orford, MA/97

The Whistling Bishop is the story of the late Bishop James C.M. Clarke's life. It's a story of love and courage and how the power of music can transcend language and cultural barriers.

www3.sympatico.ca/mistymo



It's no surprise that the searching never stops at a university. We search for answers, solutions and knowledge. And sometimes we search for something else altogether, like a chancellor.

In mid-October Canada's federal election wrapped up with news of our very own Marc Garneau being elected as the Member of Parliament for Westmount-Ville Marie, and stepping down from the position of chancellor of Carleton. Garneau was the university's ninth chancellor and saw seven new buildings added to the campus and graduation rates increase by more than 10 per cent.

"Carleton University has been most fortunate to benefit from Chancellor Garneau's gracious, elegant and thoughtful leadership. Students and their families have been honoured by his personal warmth at convocations," says Roseann O'Reilly Runte, president and vice-chancellor. "The board has benefited by his wise words and faculty and staff have been inspired by his participation in the life of the university community."

With this news, the search for a new chancellor began. A committee comprised of members of the board of governors and the university senate found the perfect fit for Carleton's 10th chancellor in the Right Honourable Herb Gray, former deputy prime minister and current Canadian chair of the International Joint Commission.

The announcement was made on November 28, 2008. "Carleton's board of governors is thrilled that the Right Honourable Herb Gray has accepted our invitation to be chancellor," says Jacques Shore, chair of Carleton's board of governors. "His willingness to serve Carleton in this way brings us distinction and honour. Mr. Gray's remarkable career in public service makes him one of our nation's most senior

statesmen. We will greatly benefit from his insights and outstanding experience."

Runte says that she was sure the entire campus community would be delighted to welcome Gray and that he "will inspire us all by his wisdom and example as we dedicate ourselves to engaging with the international com-



Carleton's 10th chancellor is the Right Honourable Herb Gray

munity to contribute to assist in solving Canada's and the world's problems."

Gray, the longest continuously serving Member of Parliament in Canadian history, was first elected to Parliament in 1962. He was re-elected in 12 subsequent federal elections—a record for consecutive victories in the same riding—and served 39 years, six months and 26 days, an unequalled record for continuous days of service in the House of Commons. Gray worked extensively as a minister and as an MP in parliamentary affairs, economic and industrial development, foreign

investment, finance, consumer protection, competition, international trade, federal law enforcement, the environment and climate change, and Canada-US border issues. In 1997, he was appointed deputy prime minister. In 2002, he was awarded the title "Right Honourable" by the Governor General in recognition of his distinguished and record-setting contribution to Canadian political life.

Gray, a companion of the Order of Canada, indicated his pleasure at serving a dynamic, innovative university where sustainability and international relations are core areas of study. He stated that he was pleased to follow in the stellar tradition of chancellors who volunteer on behalf of their institutions and work to inspire young scholars as they enter a world of change.

One such young scholar is Alysia Garmulewicz who won a prestigious Rhodes Scholarship. Garmulewicz plans to attend Oxford University in fall 2009 to pursue a master's of philosophy in geography and the environment. Until then, she will finish her degree in directed interdisciplinary studies, focusing on climate change and sustainability, at Carleton.

Garmulewicz is dedicated to making a difference in the world on environmental issues. She is organizing the World Changing Careers symposium on youth careers in sustainability in July 2009. For her entry in the 2007 Next Great Prime Minister contest, she produced a video in which she outlined her vision for Canada and beat out more than 300 people to become a finalist.

In 2006, she won the Canadian environment award sponsored by *Canadian Geographic* and in 2005—in addition to receiving Environment Canada's

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Cambio Merit scholarship—she organized the Canadian Youth Climate Conference at the age of 17. “I first became passionate about climate change on an expedition to Antarctic in 2002, when I was 15,” she says. “Growing up with a very supportive environmental family was a catalyst that led me to organize the conference.”

Carleton’s previous Rhodes Scholarship recipients include: Michael Urban, MA/07; Shona Brown, BEng/87; Bernard Hibbitts, MA/81; and Boudewyn van Oort, BScHons/61.

There is no doubt that Carleton’s bright young scholars will go on to make vast contributions to the world as they search for answers. But we can’t overlook Carleton’s faculty and researchers who are continually looking for solutions to real-world problems. In October, the Ontario government announced funding totalling \$649,000 for five Carleton researchers.

Alex Ellery, Canada Research Chair in space robotics and space technology, plans to build a robotic arm and hand that will mimic our muscles. He will also design robotic legs and develop techniques to ensure that robots can function effectively in harsh conditions at zero- or low-gravity environments.

Kevin Graham, assistant professor in physics, is part of the team at Carleton helping to unveil the secrets of the universe by researching the properties of sub-atomic particles at SNOLAB. The funds will help develop a time projection chamber technology with the aim of discovering new neutrino properties.

David Asner, assistant professor in physics, is part of the Carleton team working on the ATLAS experiment in Switzerland on the concept of mass to solve mysteries about the nature of mat-

ter and the forces that shape our universe. Asner will use funds to equip a laboratory at the university to research an upgrade of the ATLAS detector.

Jeffrey Manthorpe, assistant professor of synthetic organic chemistry, is developing ways to use sulphur to construct organic molecules. Manthorpe’s research will lead to the development of synthetic medicines and agrochemicals to improve crop yields.



Alysia Garmulewicz won a Rhodes Scholarship.

The fact that insects don’t fly according to conventional aerodynamic theory fascinates Jeff Dawson, assistant professor of biology, who will use his funds to create a research facility to study insect flight. Using real insects, model wings and flapping devices, Dawson is investigating wing movement, wing shape and the tricks insects use to stay in the air. His research could lead to the development of small, autonomous flying vehicles for search and rescue, surveillance and even space exploration.

In December, the Canada Foundation for Innovation granted \$623,959 to five more research projects.

Ian Beausoleil-Morrison, Canada

Research Chair in the modeling and simulation of innovative energy systems for residential buildings, plans to help reduce greenhouse gases through the emerging concept of household micro-cogeneration.

By understanding the causes and consequences of problematic gambling, Michael Wohl, assistant professor in psychology, aims to enhance the quality of life for Canadians who engage in problematic play. The Carleton University Gambling Lab will provide the infrastructure needed to study the facilitation and maintenance of problematic gambling as well as prevention and intervention initiatives.

Tong Xu, assistant professor of physics, is developing techniques to improve the delivery accuracy of radiation therapy, especially for lung cancer patients. Xu’s techniques can provide direct measurement of tumour location in real-time. The development and commercialization of these techniques would significantly improve radiation therapy.

Assistant professor in linguistics, Masako Hirotani’s research advances understanding of the human language processing mechanism. It brings together experimental techniques and knowledge from linguistics, psychology and neuroscience.

In the Advanced Lab for Heterogeneous Communication Networks, F. Richard Yu, assistant professor, information technology, will break down the barriers between different communication networks by providing a unique integrated capability for heterogeneous networks. This lab will act as a focal point for collaborations between Carleton and industry.

At Carleton, from chancellors to students to faculty and staff, the task eternal is an eternal search. ■

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Cleansing the palate

Embracing the evolution of on-campus food

BY LAURA CUMMINGS

Passing by the same tired menu of mass-produced casseroles dreaded by students everywhere, Carleton University school officials are instead embracing the ever-changing, ever-evolving face of on-campus food and focusing on providing healthier, more conscious choices.

Carleton food outlets experience approximately 20,000 customer transactions a day, explains Ed Kane, assistant vice-president of university services, with the residence dining hall alone serving more than 3,000 meals a day. Some customers—whether staff, faculty or students—interact with food services on campus up to six or seven times throughout the day, he adds.

"There's ethnic to organic to good old tried-and-true burgers and fries," Kane says of the school's on-campus offerings.

The past half-decade has seen a major shift in the way Carleton provides food, he continues.

"We've improved the dining service experience quality," Kane explains, citing the \$5 million in renovations to

thing from how it's grown to where it's disposed.

"Organic and sustainability are new buzzwords in the world of food right now," Kane adds.

Carleton—which was "ahead of the curve" in its disposal of wet waste several years ago—most recently implemented a tray-less program in the residence dining hall this fall to cut down on water use, he says. Carleton is one of only 10 schools across the country to do so.

But while Carleton's food services attempt to offer tasty options that are good for the body—and the environment—other school departments are trying to ensure staff and students know what to pick.

Though nutrition isn't the most common issue cropping up at health and counselling services, it can play a significant role in a variety of different medical issues, explains Patty Allen, a campus health educator and registered nurse.

"It's so common," she says of poor nutrition, which can impact everything

on the pounds and bad nutrition.

"It's partly food choices, but also when you're eating," Allen continues, pointing to the range of skills and advice health and counselling can offer to combat unhealthy habits and practices. "There's a whole dynamic to it."

Meanwhile, even student-run restaurants and food vendors are getting into the practice of serving up healthy alternatives, with coffee shop Rooster's already offering a "pretty good" mix of options and undergraduate bar Oliver's soon revamping its menu to include new items like rice, explains Erik Halliwell, vice-president of student services for the Carleton University Students' Association (CUSA).

For CUSA, the volunteer collective-driven Garden Spot has become one of its most significant sources for healthy meals, he says.

"It's a fairly large shift for us, because it's a pay-what-you-can, vegan option," Halliwell says, with the outlet maintaining steady growth in popularity. "There are lines there now. (It's reflecting) the wishes and wants of students and staff."

But the wishes and wants of on-campus eaters has also meant the advent of brand-name outlets, though Halliwell suggests those vendors haven't dissuaded student-run businesses.

"They've always been there, and we've always done fairly okay," he says, highlighting the inviting atmosphere and unique offerings in Carleton's student-run options. "The impact is negligible."

Bringing in businesses like Subway and A&W—a practice started just over a decade ago on student demand—"serves niche markets," agrees Kane. "Brand names are in the marketplace, but we have a balance. There's a mix—everything from grab-and-go to a catered meal. (Between Tim Horton's, Starbucks and Rooster's) you'll see line-ups at all three different merchants—there are different people who go there. Choice is probably the biggest thing we're trying to provide." ■

More than ever **Carleton foodies** are on the lookout for **healthier options...but** they can still get burgers or pizza.

almost every campus facility, new options like in-house shawarma, vegan and halal and brand-name additions including Starbucks.

"If there's a demand, we try to meet it," he says. "We're trying to provide as much choice as possible."

Though a wide range of choices is one of the main drivers on campus, now more than ever Carleton foodies are on the lookout for healthier, more conscious options—but still knowing they can fall back on old favourites like burgers or pizza, Kane continues.

The process of providing the food is also becoming as important as what's served on the plate, he explains, with consumers concerned about every-

from gaining the infamous "Freshman 15" and to serious problems like low iron, fatigue and a weakened immune system.

With proper nutrition a mystery for many students—and even some faculty and staff—a myriad of resources in health and counselling are devoted to the topic, including workshops, residence events and dieticians, Allen explains.

Though an "immense" decrease in activity levels is the big issue for a majority of students, not having a parent cooking at least one meal a day—as well as stocking cupboards with healthy choices—often skipping breakfast and eating late at night can mean packing



d Kane (right), assistant vice-president
f university services, says Carleton food
outlets experience approximately 20,000
customer transactions a day.



Onita Basu (left) and Banu Örmeci (right) both in the department of civil and environmental engineering, are examining issues around wastewater treatment and public health.

Down the drain

Innovative researchers at Carleton examine wastewater and public health.

BY ELIZABETH HOWELL

In lakeside rural areas, where everyone builds bigger chateaus in an effort to look richer than their closest neighbours, the state of the landscaping is key.

It's useless to have a half-million dollar house sitting on top of a brown lawn, you think. When the annual August drought hits and the grass begins to wither, what's the harm of spraying a little fertilizer to keep it clean and green? Or letting the dog enrich the lawn *au naturel*?

Both practices cause quite a bit of harm, it turns out. For example, Quebec cottage country real-estate values plummeted in 2007 after several lakes were infested with blue-green algae—a plant that feeds on fertilizer, untreated sewage and even dishwasher soaps.

Such an incident speaks to an urgent need to rethink how we keep our waters unpolluted, say two Carleton professors investigating alternative cleanup methods.

"In general, most people think we do not have a problem in Canada and waste-borne diseases are part of developing nations," says Banu Örmeci, assistant professor in the department of civil and environmental engineering. "But incidents such as Kasheschewan in 2006 and before that, Walkerton, show us this is not the case."

Both communities Örmeci mentions had untreated sewage pervade their water systems, causing at least seven deaths in Walkerton in 2000 and the forced relocation of the Kasheschewan community. And those are not isolated incidents, either.

"Thirty per cent of Canadian First Nation reserves are under boil-water advisories at any given time," adds Örmeci, who is also the Canada Research Chair in wastewater and public health engineering.

Using chlorine is the traditional approach to disinfecting dirty water. But frequent swimmers in public pools can attest to the swollen eyes and itchy skin caused by a douse of the oxidant. Adding such a powerful chemical puts a water ecosystem at risk of being further damaged, Örmeci argues. So her favourite approach, which has been gaining traction in Canada for at least the last five years, is using ultraviolet (UV) disinfectant.

Like visible light, UV rays come from the sun. But because the rays have a longer wavelength than the colours we see, that type of radiation is invisible to human eyes.

Traditionally we see UV rays as something to avoid because they can cause sunburn on unprotected skin. But in water, they have another function: without the need of chemicals, the rays inactivate pathogenic micro-organisms that cause diseases in people. It is a powerful method in-

deed, says Onita Basu, assistant professor, department of civil and environmental engineering. But she has also studied another disinfectant used frequently in Europe, but which hasn't really made its way to Canadian shores yet. It may be an effective replacement for chlorine or possibly be useful in conjunction with UV.

"The option I've decided to look at is peracetic acid, because it's easy to use in the existing wastewater treatment infrastructure we have in Canada," she says. "It's active in the treatment process itself, but less toxic compared to chlorine because it breaks down mainly into oxygen and water after reacting with the contaminant."

The approach garnered substantial Ministry of Environment support this year, especially after the federal government passed legislation limiting the amount of chlorine municipalities can use to treat their water.

With the ministry's support, Basu began a full-scale test at the Baker Road Wastewater Treatment Plant in Grimsby, Ont., a municipality in the Niagara Region.

Our water and wastewater
treatment infrastructure is quite
underfunded.

The study concluded in late 2008, and she is anxious to sort through the results before the federal regulations take hold in 2010.

What worries her most is the crumbling pipes and plants that carry water around municipalities in Canada—pipes and plants which, like the roads and bridges we drive on, are in desperate need of renewal.

"Our water and wastewater treatment infrastructure is quite underfunded," she says. "We always complain about the cost on our water bills. No one likes to see their tax rate increase, but this is why it has to go up."

"People want and need better treatment, but it falls upon the taxpayer to provide the funds. Are they willing to pay the price?"

It would be logical to do so, given the rising tide of public health concerns about the state of our waters. Sitting by the cottage lake is far more enjoyable when you know the water is clean enough for a dip or a drink. ■

Elizabeth Howell, BJ/07, is a freelance science journalist and a reporter at the Ottawa Business Journal.

Get the party started

BY ESTHER MBITHI

Food is so much a part of our everyday lives that we rarely stop to think about it—that is unless we are starving or having a party. In Kenya the month of December is one long party. After the election and civil unrest and violence in 2007, the party in 2008 was bigger and lasted much longer.

Once the party starts, the enticing aroma of *pilau* (pilaf) never leaves the air. This year, however, in addition to the traditional fare of *nyama choma* (roasted meat), *chapatti* (flat bread), *mokimo* (mashed potatoes with peas, corn, garlic and onion) *pilau* and *kachumbari* (tomato relish), we are seeing increasing amounts of sweet potatoes and arrow roots.

Arrow roots and sweet potatoes are root crops like Irish potatoes. The edible part of the plant grows under ground. Once dug out, the preparation is simple and straightforward: wash and boil. Peel and serve. Unlike the bland Irish potato, arrow roots and sweet potatoes taste good when boiled. They require only clean drinking water by way of accompaniment.

Both crops are indigenous to Kenya and have been an all-time favorite with rural folk for good reason. They are readily available and require little by way of labour or other inputs. Arrow roots need plenty of water and can only be found in swampy places. Sweet potatoes, on the other hand,

do well practically everywhere and can easily replace *maize* (corn) as the staple food in Kenya.

The combination of convenience, availability and ease of preparation is irresistible. But that's not why they have found their way to our tables. The secret lies in their nutritional value and health benefits. These simple foods are said to help the body to repel life-threatening illnesses such as cancer and diabetes.

Nevertheless, no matter how health-conscious we become, a party in Kenya can never be complete without the trademark *pilau*, a rice dish that is prepared in as many different ways as there are cooks. The basic ingredients, however, remain the same: some spices and seasoning, some rice, some meat, oil and water. The good news is that the health benefits of most of the spices are legendary, so even *pilau* can be a health food. For those of you who are prepared to sample some exotic delights the next time you have a party, here are my own home recipes. Enjoy! ■

Esther Mbithi, MA/93, is a member of the editorial advisory committee of Carleton University Magazine. Residing in Nairobi, Kenya, Mbithi is our committee's first international member.

Pilau

Ingredients

1/2 Tbsp cumin seeds
1/2 Tbsp whole black peppercorns
Several cloves of garlic
A few pinches ground cinnamon
A few pinches ground cardamom
2 Tbsp of ground ginger
Salt to taste
3 cups of rice
2 to 4 medium onions, chopped
A 1/4 kilogram of meat (beef, chicken or mutton), cut into bite-size pieces
4 ripe tomatoes, chopped (or canned tomatoes)
4 potatoes, peeled and cut into quarters
1 cup pre-boiled or canned green peas (optional)
2 cups of water for each cup of rice

Directions

Combine cumin, peppercorns, cinnamon and cardamom and pound until it is a fine mix. Pound the garlic and ginger together and set aside.

Heat the oil in a deep pot and fry onions until slightly brown. Add garlic and ginger. Continue stirring and frying until the flavors have mixed well.

Add the salt and meat, stir and cook over high heat until the meat is browned on the outside. Reduce heat and simmer for a few minutes. Remove the meat and most of the onions,

and set them aside. Add the rice and stir it thoroughly to coat each grain of rice with the oil. Add the spices and water. Stir. Wait for the water to boil. Add the tomatoes. Cover and simmer for a few minutes. Add the potatoes, peas, meat and onions. Keep covered and continue cooking over low heat for 10 more minutes. Remove pot from stove and keep covered. Place the pot in warm oven for an additional 10 to 20 minutes. All the moisture should be absorbed by the rice and the potatoes should be tender. Serve hot with *kachumbari*.

Kachumbari

Ingredients

2 onions
4 tomatoes
Salt to taste
Juice of one lemon
1 Tbsp of chopped coriander
A few green chilies (optional)

Directions

Peel and slice the onions thinly. Cover them with clean warm water, sprinkle them with salt and set aside. Slice the tomatoes thinly and mix with the chopped coriander, lemon juice and green chilies. Drain the onions and squeeze them until soft—this removes their strong taste. Rinse with clean water, squeeze out excess liquid and mix with the tomatoes.

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